

WHAT IS CLAIMED IS:

1. A method for operating a gas turbine engine, said gas turbine engine comprising a nozzle including a plurality of chevrons coupled to the nozzle, said method comprising:

channeling compressed air from the gas turbine engine to a noise suppression system; and

selectively operating the noise suppression system such that air discharged from the noise suppression system enhances a streamwise vortex generated downstream from each respective chevron.

2. A method in accordance with Claim 1 wherein selectively operating the noise suppression system further comprises selectively operating the noise suppression system such that air discharged from the noise suppression system facilitates reducing gas turbine noise generated during engine operation.

3. A method in accordance with Claim 1 wherein the noise suppression system includes a manifold and a plurality of tubes coupled to the manifold, wherein channeling compressed air from the gas turbine engine to a noise suppression system further comprises:

channeling compressed air from the gas turbine engine into the manifold; and

discharging the air from the manifold into the respective chevron flowpath through the plurality of tubes.

4. A method in accordance with Claim 3 wherein the noise suppression system includes an actuation valve, wherein channeling compressed air from the gas turbine engine to a noise suppression system further comprises selectively operating the actuation valve to channel compressed air from the gas turbine engine to the manifold.

5. A method in accordance with Claim 3 the plurality of tubes includes at least a first tube and a second tube, wherein discharging air from the manifold further comprises orienting the first tube and the second tube such that air discharged from the first tube and the second tube generate a single of vortex on both sides of each respective chevron.

6. A method in accordance with Claim 3 wherein said discharging air from the manifold further comprises discharging compressed air from the manifold through the plurality of tubes into a core gas turbine engine nozzle chevron flowpath.

7. A method in accordance with Claim 1 wherein said discharging air from the manifold further comprises discharging compressed air from the manifold through the plurality of tubes into a fan nozzle chevron flowpath.

8. An assembly for a gas turbine engine, said assembly comprising:

a gas turbine nozzle;

a plurality of chevrons coupled to said gas turbine nozzle; and

a noise suppression system coupled to said gas turbine nozzle, said noise suppression system is selectively operable to facilitate enhancing a streamwise vortex generated downstream from each respective chevron.

9. An assembly in accordance with Claim 8 wherein said noise suppression system further comprises:

a manifold coupled to said gas turbine nozzle; and

a plurality of tubes coupled to said manifold, each of said plurality of tubes is selectively oriented to facilitate enhancing a vortex generated in said gas turbine nozzle chevron flowpath.

10. An assembly in accordance with Claim 9 wherein said plurality of tubes comprises a plurality of tube pairs comprising:

a first tube that extends radially inward at an angle β with respect to a centerline axis; and

a second tube that extends radially inward at the angle β with respect to the centerline axis, said first tube oriented approximately parallel to said second tube.

11. An assembly in accordance with Claim 9 wherein each of said plurality of tube pairs is selectively oriented to facilitate generating a streamwise vortex downstream from each respective chevron in a core gas turbine engine nozzle flowpath.

12. An assembly in accordance with Claim 9 wherein each of said plurality of tube pairs is selectively oriented to facilitate generating a streamwise vortex downstream from each respective chevron in a fan nozzle flowpath.

13. An assembly in accordance with Claim 8 wherein said noise suppression system further comprises:

a manifold coupled to said gas turbine nozzle; and

exactly eight tube pairs coupled to said manifold, each said tube pair being selectively oriented to facilitate generating a streamwise vortex downstream from each respective chevron.

14. An assembly in accordance with Claim 8 wherein said noise suppression system further comprises an actuation valve selectively operable to discharge compressed air from said gas turbine engine to said noise suppression system, such that said noise suppression system is at least one of continuously operated or pulse operated.

15. A gas turbine engine comprising:

a core engine nozzle;

a fan nozzle;

a plurality of chevrons coupled to at least one of said core engine nozzle and said fan nozzle; and

a noise suppression system coupled to at least one of said core engine nozzle and said fan nozzle, said noise suppression system is selectively operable to facilitate enhancing a streamwise vortex generated downstream from each respective chevron.

16. A gas turbine in accordance with Claim 15 wherein said noise suppression system further comprises:

a manifold coupled to said gas turbine nozzle; and

a plurality of tube pairs coupled to said manifold, each said tube pair is selectively oriented to facilitate enhancing a vortex generated downstream from each respective chevron.

17. A gas turbine in accordance with Claim 16 wherein each said tube pair comprises:

a first tube that extends radially inward at an angle β with respect to a centerline axis; and

a second tube that extends radially inward at the angle β with respect to the centerline axis, said first tube oriented approximately parallel to said second tube.

18. A gas turbine in accordance with Claim 16 wherein each said tube pair is selectively oriented to facilitate enhancing a vortex generated downstream from at least one of said core gas turbine engine nozzle chevron and said fan nozzle chevron.

19. A gas turbine in accordance with Claim 16 wherein said noise suppression system further comprises:

a manifold coupled to said gas turbine nozzle; and

exactly eight tube pairs coupled to said manifold, each said tube pair is selectively oriented to facilitate generating a vortex downstream from each respective chevron.

20. A gas turbine in accordance with Claim 15 wherein said noise suppression system further comprises an actuation valve selectively operable to discharge air from said gas turbine engine into said noise suppression system.